Support Information

Facile synthesis of molybdenum phosphide@carbon nanocomposite as advanced anode materials for sodium-ion batteries

Yang Cao,[a,b] Bao Zhang,[a] Xing Ou,[a,*] Yunsha Li,[a] Chunhui Wang,[a] Liang Cao,[a] Chunli Peng[a] and Jiafeng Zhang[a]

a School of Metallurgy and Environment, Central South University, Changsha 410083, P.R. China. Email: ouxing@csu.edu.cn

b Medical Engineering Center, Xiangya Hospital, Central South University, Changsha 410008, P.R. China.

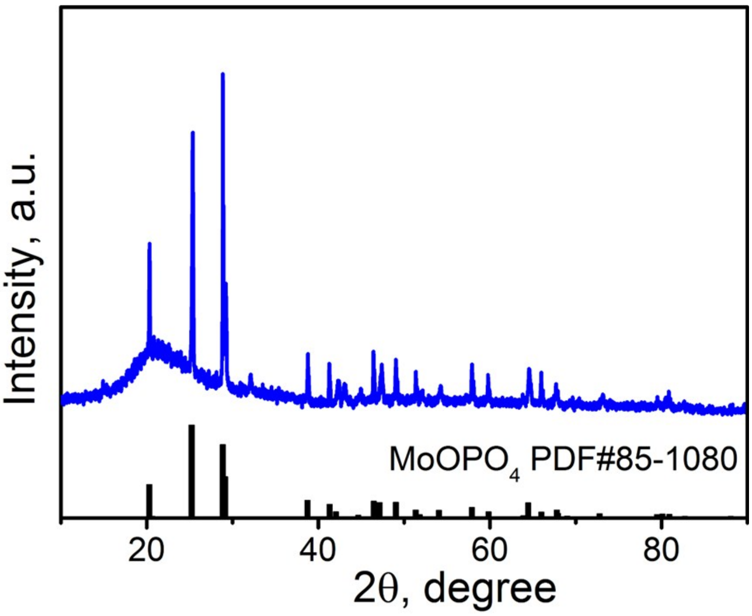

Fig. S1. XRD patterns for final product of MoP sintered at 600 °C under air atmosphere.

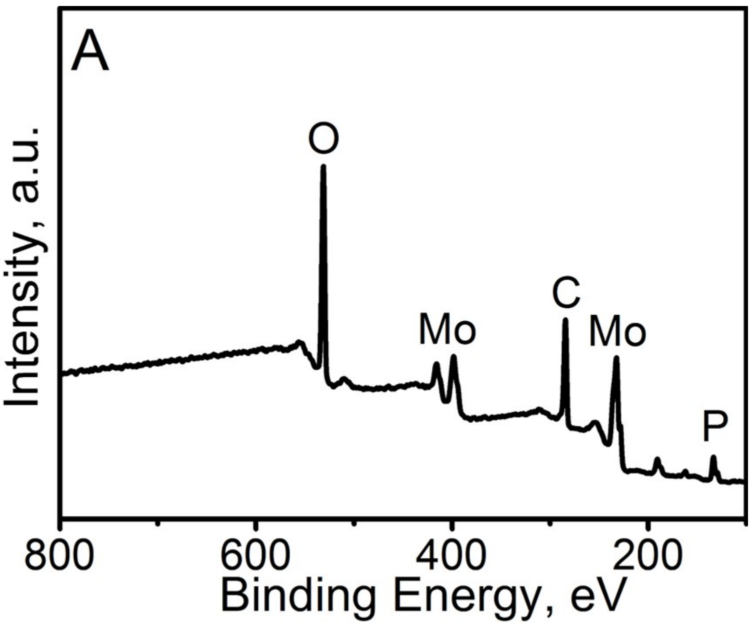

Fig. S2. XPS spectrum for full patterns of MoP composite.

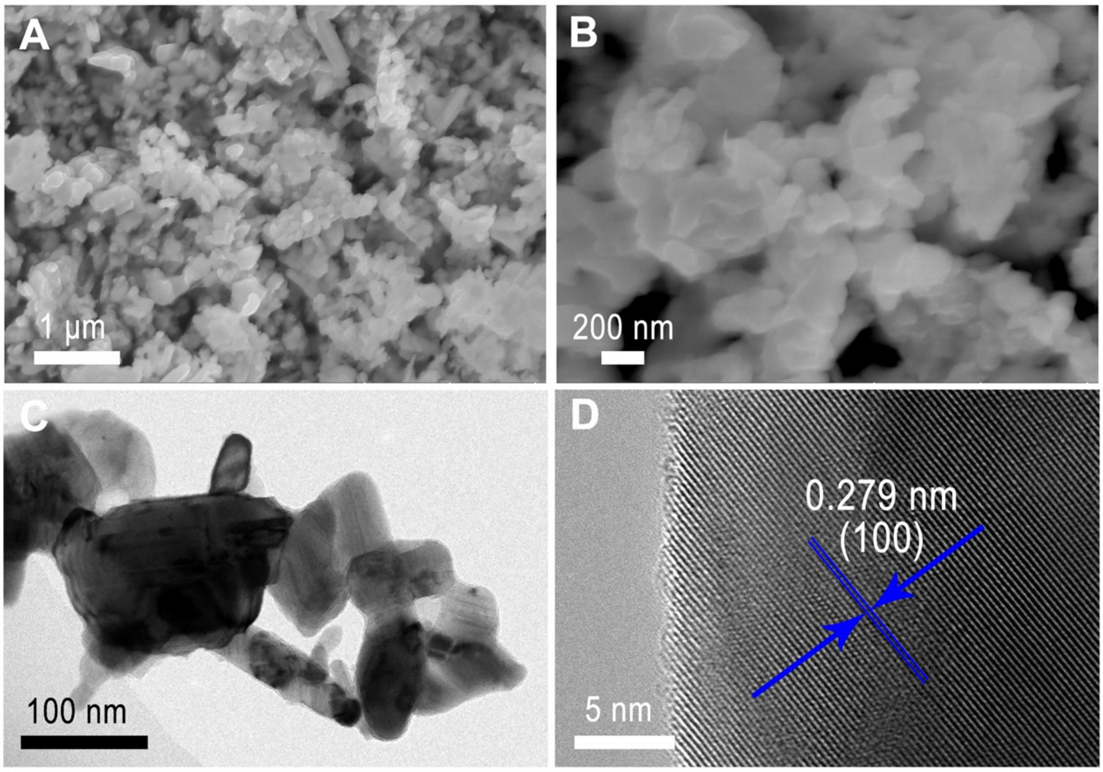

Fig. S3. SEM (A,B), TEM (C), and HRTEM (D of as-prepared bare MoP.

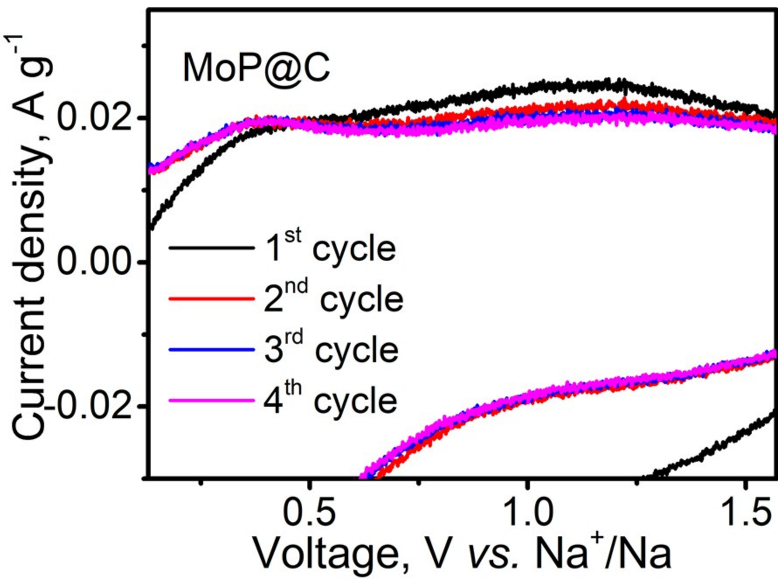

Fig. S4. CV curves for MoP@C composite with partial enlargement of Fig. 4A.

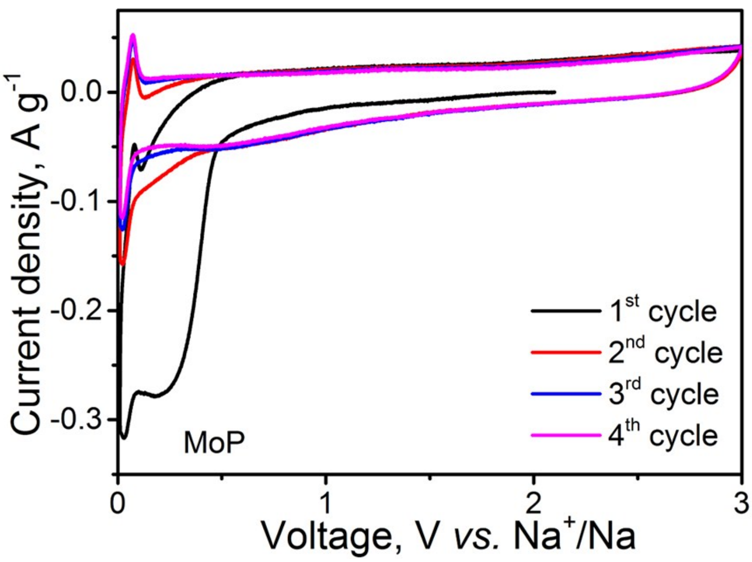

Fig. S5. CV curves of bare MoP for initial 4 cycles.

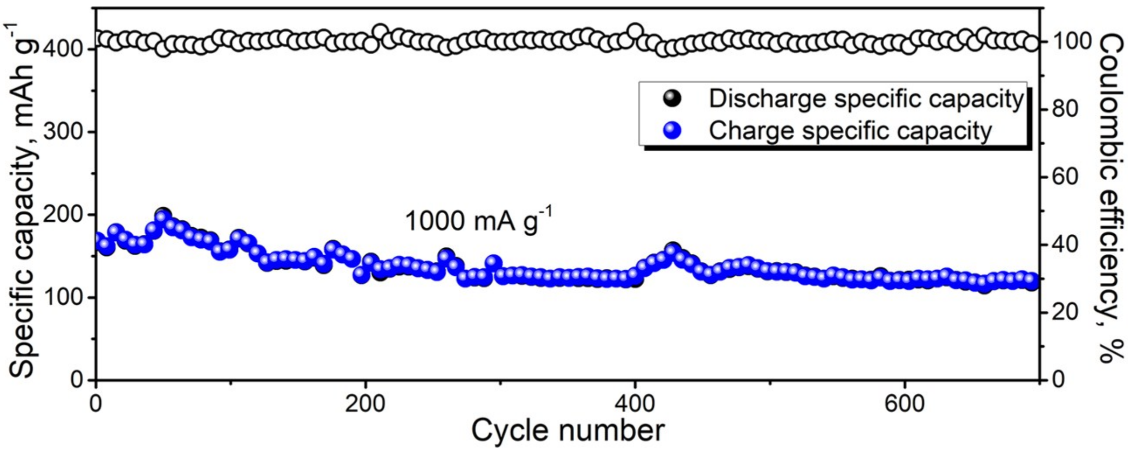

Fig. S6. Cycling performance at rate of 1000 mA g^{-1} for MoP@C composite.

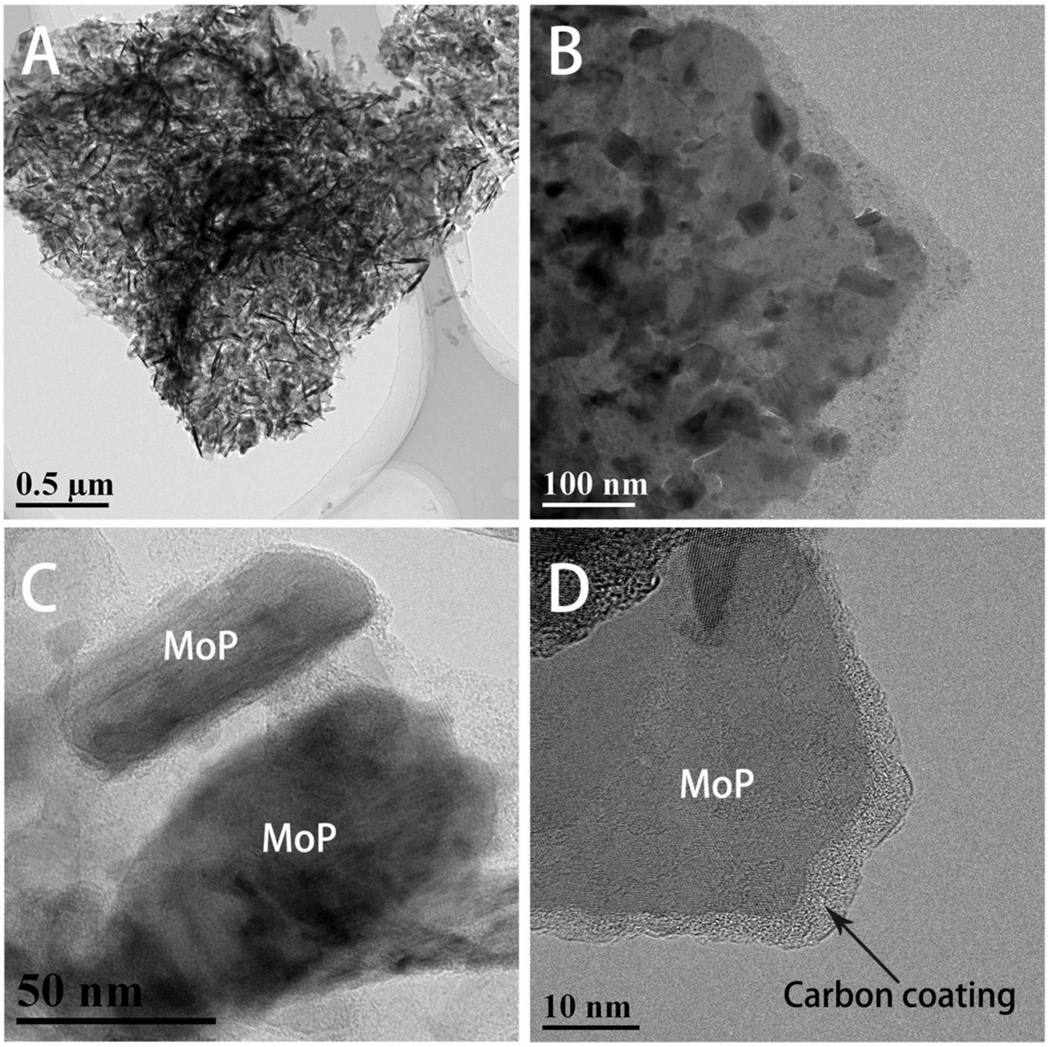

Fig. S7. TEM images of as-prepared MoP@C composite.

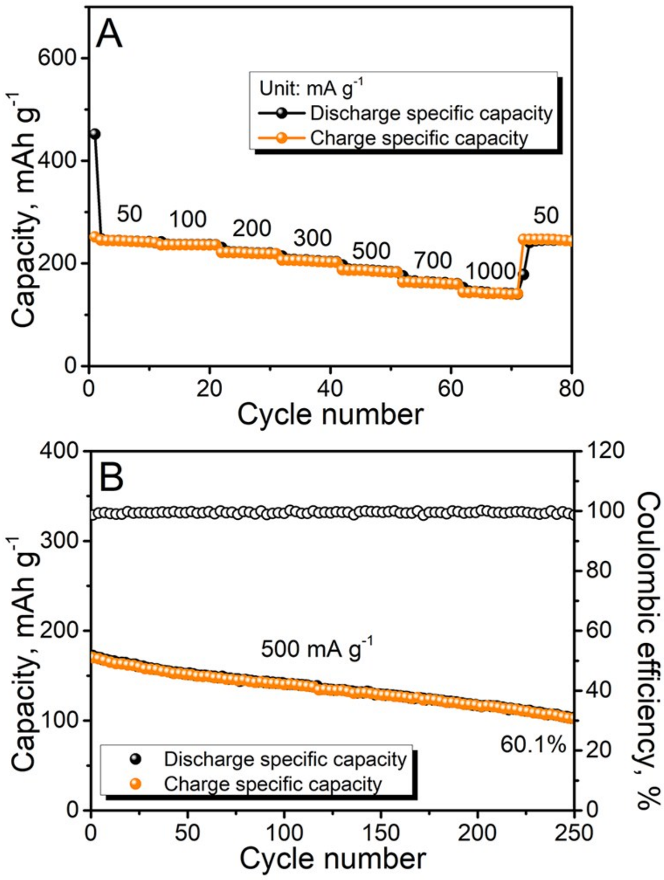

Fig. S8. Rate capability (A) and cycling performances at the rate of 500 mA g^{-1} (B) for MoP with C composite.

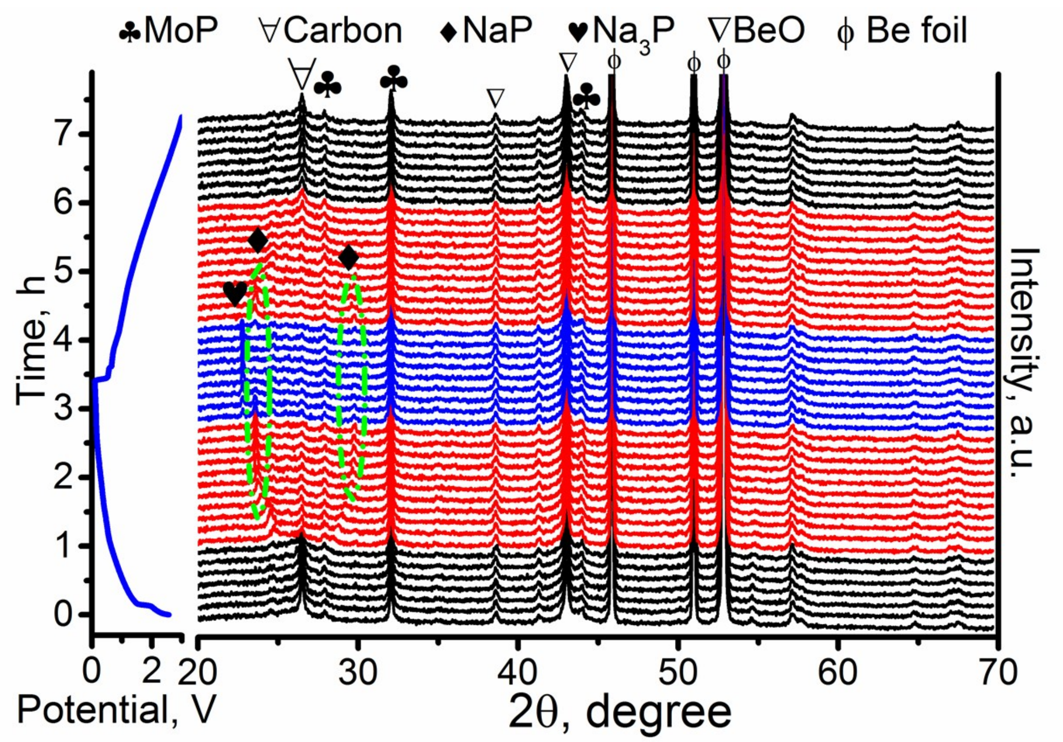

Fig. S9. *In-situ* XRD full patterns at 2θ regions of 20-70^{o} against the discharge/charge cycle of MoP@C composite.

Table S1. Comparison of electrochmical performance for MoP/C with other TMPs materials reported elsewhere as the anode materials for SIBs.

Sample	Rate capability Capacity/current ($mAh\ g^{-1}/mA\ g^{-1}$)	Cycling stability Capacity retention/cycles number ($mAh\ g^{-1}$/%/n)	References
MoP	173.8/1000	87.4%/250	Our work
FeP	60/500	69%/60	[S1]
CoP	200/1000	70%/25	[S2]
CoP	155/1600	77.5%/100	[S3]
Ni_2P	132/1000	89%/100	[S4]
Cu_3P	203.7/1000	79.9%/100	[S5]
Ni_2P	172.1/1000	31.1%/2000	[S6]
MoP	161.9/800	97.1/800	[S7]

Table S2. Result of electrochemical impedance and Warburg coefficient in Fig. 5.

Samples	R_s, Ω	R_{ct}, Ω	σ_w, Ω s^{-1}	D_{Na}, $cm^2\ s^{-1}$
MoP	10.94	9.92	72.06	8.74×10^{-14}
MoP@C	8.52	3.24	18.81	1.28×10^{-12}

Reference

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